



IH-635 (LBJ Freeway) LBJ Updates and Design Implementation



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Dallas Branch - Texas Section
ASCE - 80th Anniversary
May 3, 2004



Topics

- The West Section:**
 - Project Description
 - Drainage Study
 - Geotechnical Investigation
- Managed Lanes:**
 - Value Pricing
 - Investment Grade Traffic and Revenue Study
- Implementation:**
 - Comprehensive Development Agreement (CDA)

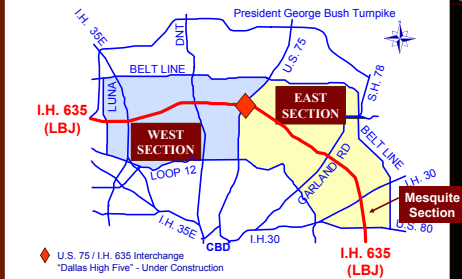



Topics

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 - Geotechnical Investigation

Project Description





U.S. 75 / I.H. 635 Interchange
"Dallas High Five" - Under Construction





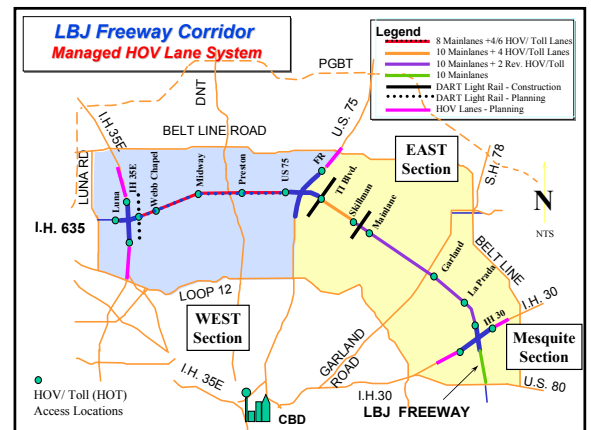
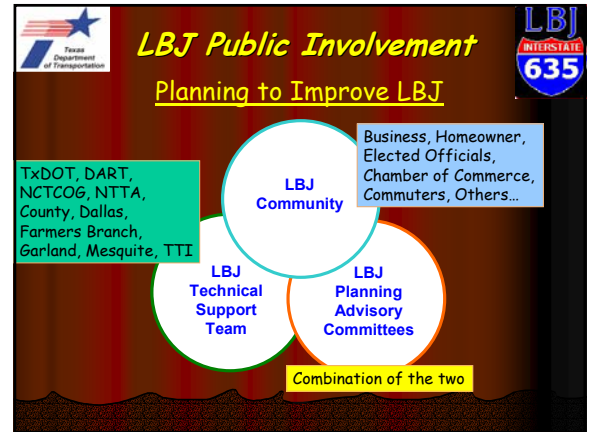
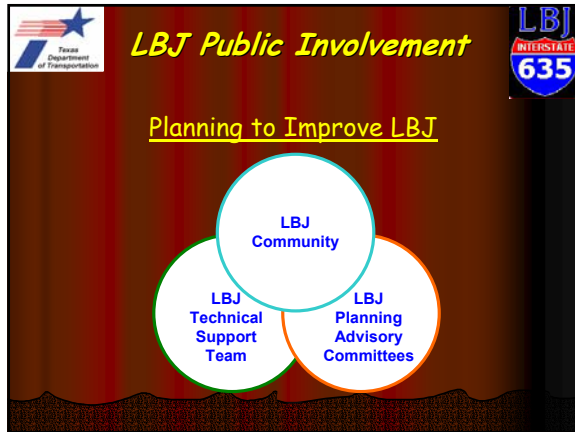


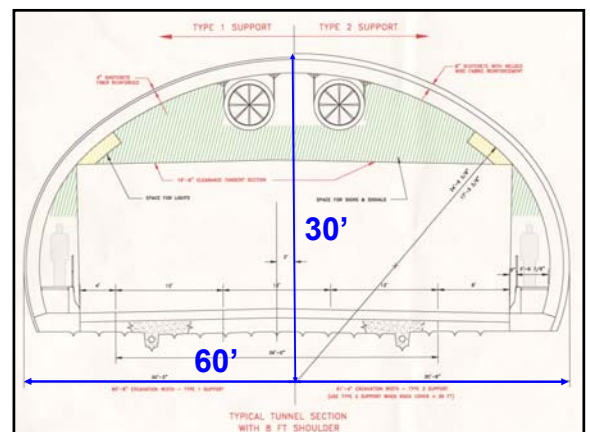
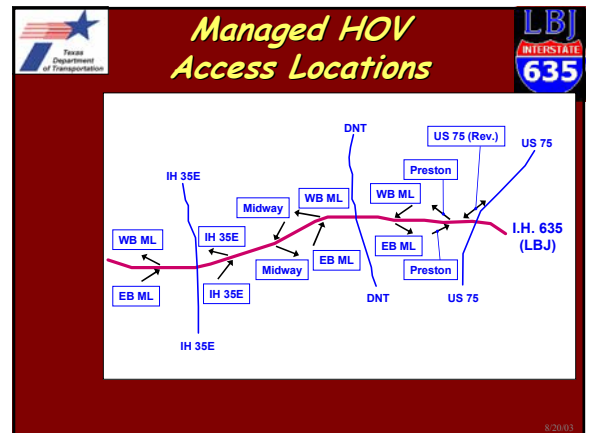
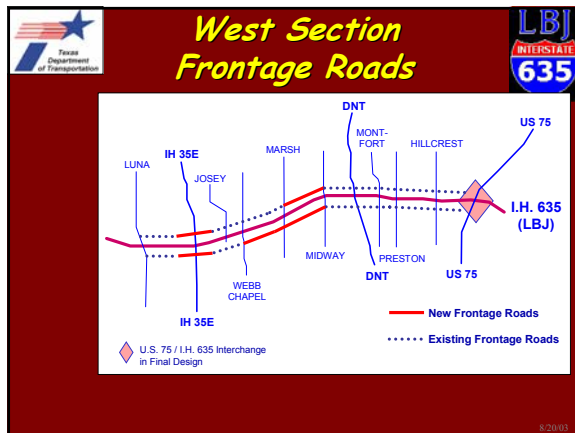
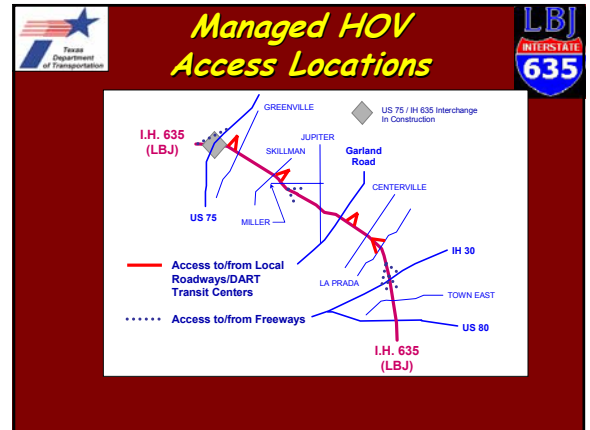
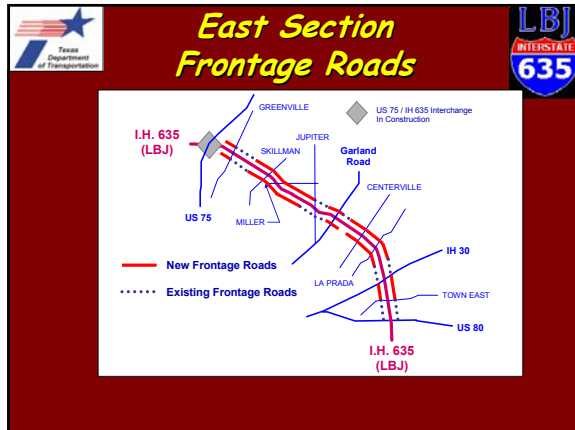



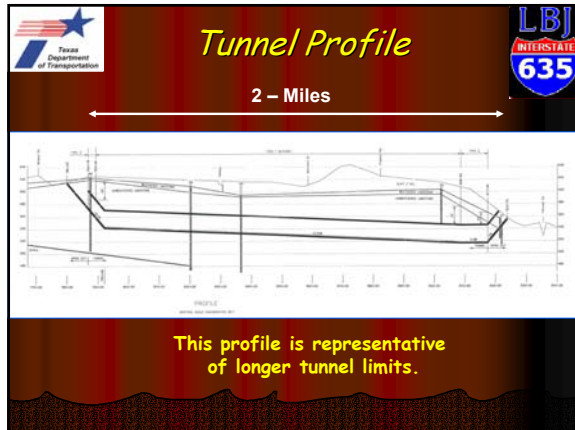
The LBJ Challenge

- Balanced trip patterns (AM Peak Hour)
 - Local 20%, Origin 22%, Destination 31%, Through 27%
- Peak traffic levels for 12 hours a day
- Continued traffic growth in non-peak hours
- Increased traffic to arterial street system
- Increased frequency of incidents
- Less trip predictability and reliability

5/5/2004







Construction Costs
(in millions of \$'s)

1 – Interchange (US75/I635)	\$ 262	◆
2 - Mesquite	\$ 28.9	●
3 - East	\$ 458	
4 – West (Incl I635/I35E)	\$ 961	
Total	\$1,709.9	

◆ - Under Construction
● - Partially Funded by the City and includes \$9M for mainlane reconstruction by TxDOT.

Note:
Totals do not include costs for ROW, Utilities, Engineering, Survey, Testing, and Operation & Maintenance costs for the Tunnels and ITS.

Project Costs

Schematic Construction Costs

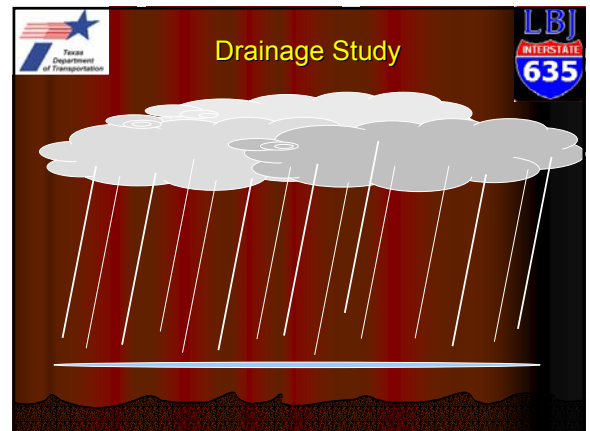
LBJ West Section - Luna Road to US 75

Project	Cost (\$ Millions)
IH 35E Interchange (Luna to Webb Chapel)	270.6
West Section Tunnel & Transition Sections (Webb Chapel to Merit)	587.9
LBJ Mainlanes and Ramps between Portals (Midway to Preston)	77.6
Early Frontage Roads (Hillcrest to Merit)	24.5
Total	\$960.6

Note:

- Does not include US 75 / IH 635 Interchange Costs of \$261.9 Million.
- Preliminary Cost Estimate based on Schematic Drawings. Costs will continue to be updated as more detail is developed.
- Costs do not include engineering, E&C, surveying and testing.
- Costs do not include ROW or utility relocation costs.

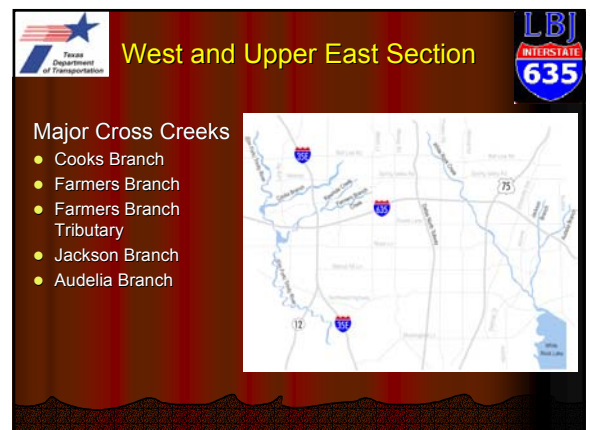
5/5/2004




Drainage Study

Mission


Develop Drainage Criteria and Preliminary Drainage Plans to Serve as the Basis for Consistent Drainage Design by Future LBJ Freeway Section Engineers in a Format that is Thorough and User Friendly






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East Section



Major Cross Creeks


- Dixon Branch
- Long Branch
- South Mesquite






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of Transportation

Key Tasks




- Develop Drainage Criteria Manual.
- Determine Drainage Impacts Caused by the Proposed IH 635 Improvements.
- Determine Preliminary Structure Sizes of Drainage Crossings.
- Coordinate Drainage Improvements with the Proposed Roadway Improvements (Minor Schematic Revisions).
- Coordinate with Federal, State and Local Agencies to Obtain Required Permits.
- Develop Project Web Site.



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Schedule




West Section

- 100% Submittal May 2004


East Section

- 65% Submittal August 2004
- 95% Submittal October 2004
- 100% Submittal December 2004




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Capacity Improvements




- IH 35E Near Valley View Lane: Capacity of the Downstream Closed System will Be Improved by **Diverting Offsite Flow to Cooks Branch.**
- IH 35E Near Havenhurst Street: Capacity of the Downstream Closed System will Be Improved by **Diverting Offsite Flow to Cooks Branch.**
- IH 35E at Cooks Branch: **7 - 8' x 7' Box Culverts Replaced by Bridge Structure.**
- IH 635 at Jackson Branch: **Added 78" Pipe** to the 4 - 9' x 9' Box Culverts.
- IH 635 at Audelia Branch: **Added 54" Pipe** to the 5 - 10' x 8' Box Culverts.

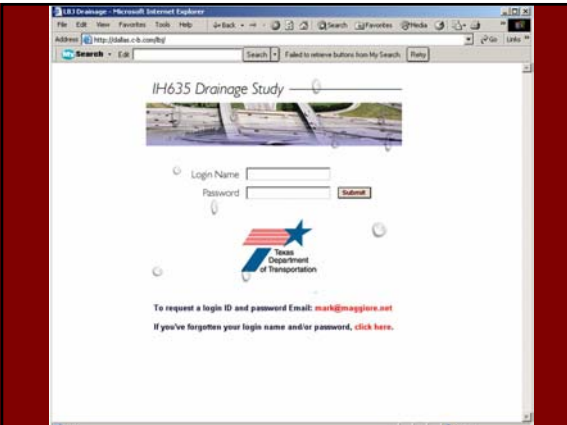


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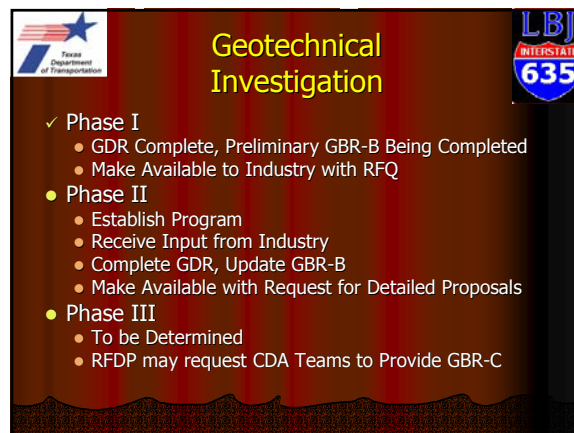
Results

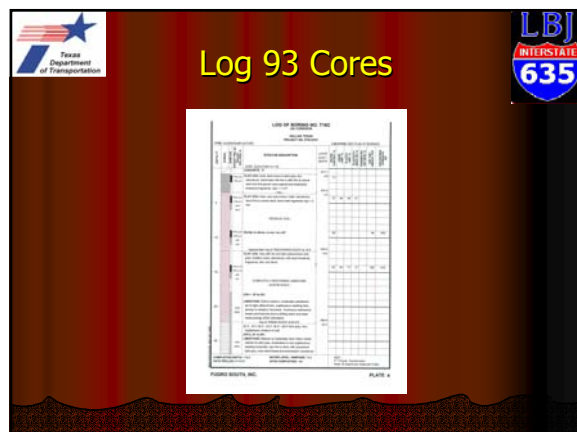
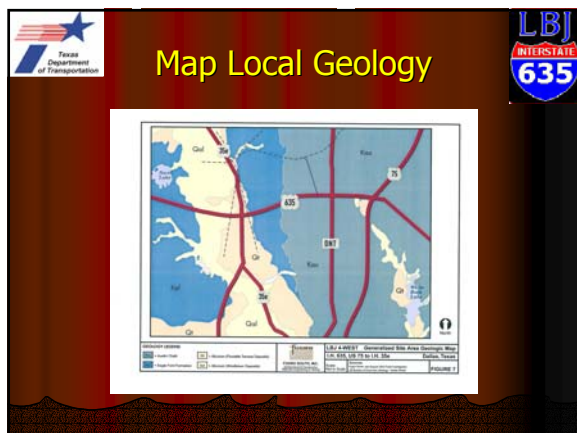
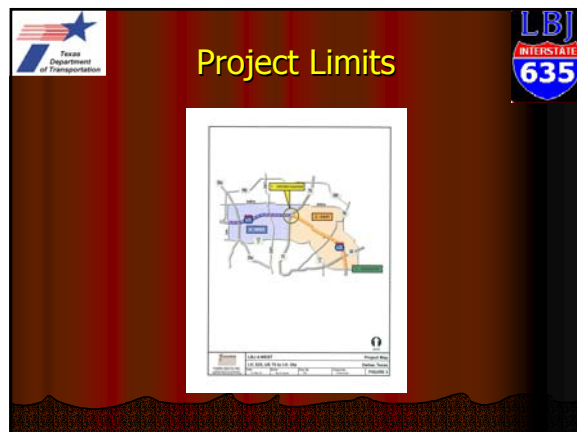
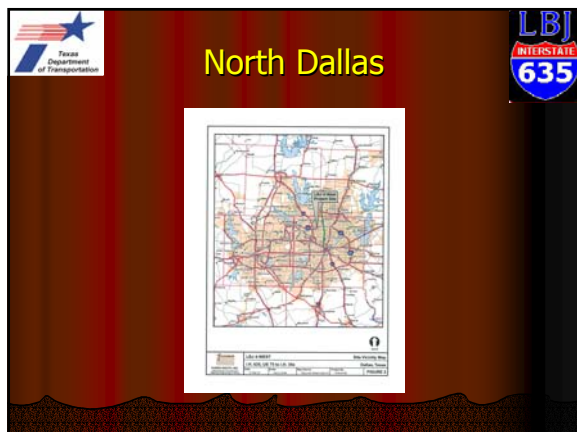


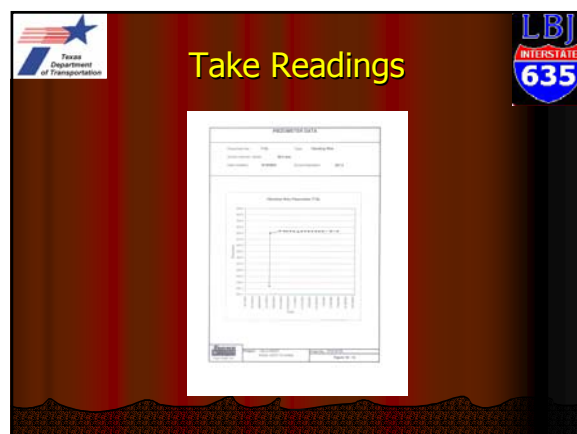
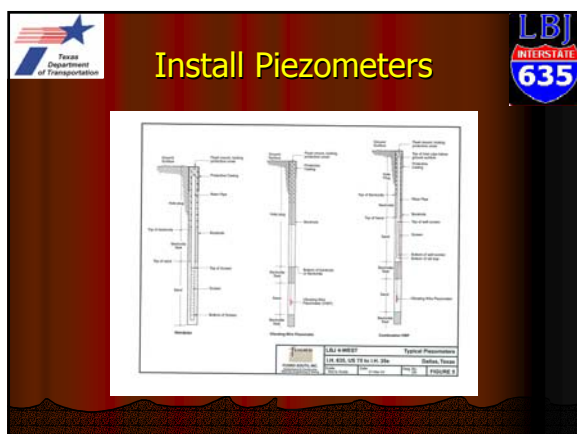
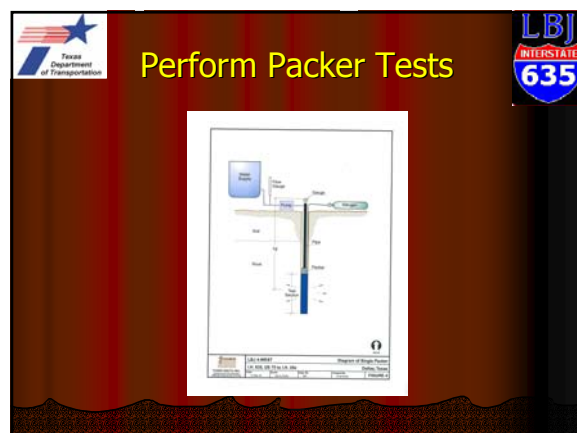
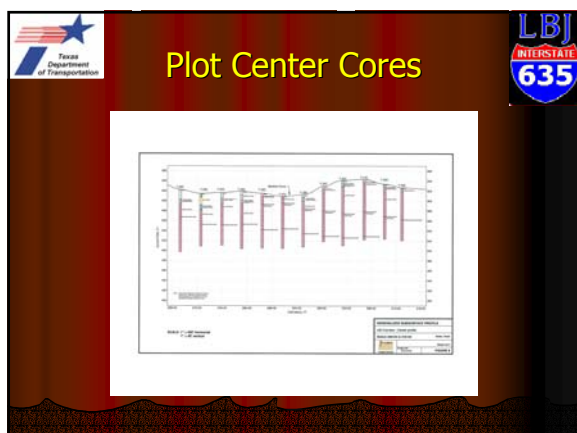
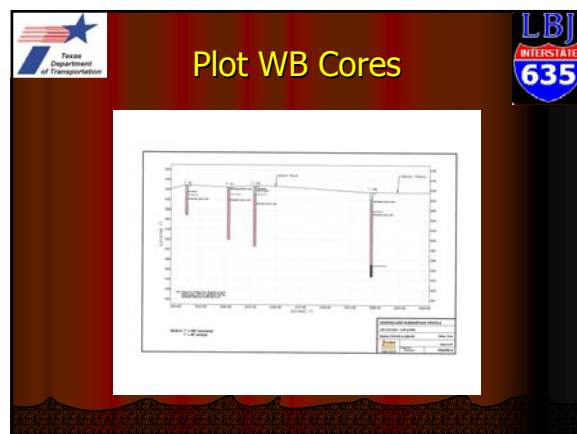
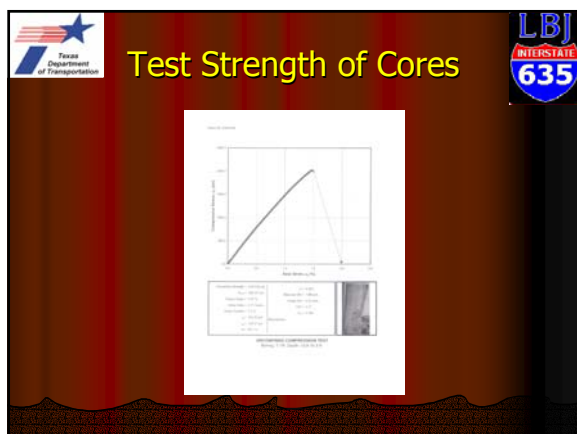
- Nine IH 635 Cross Structures will be Diverted Due to the Managed Lane Box Sections.
- Four Primary Alternatives Studied for Diverting Flow in the Managed Lane Box Section Area.
 1. Drainage **Culverts** Located **South** of the Managed Lane Boxes Below the Eastbound Frontage Road and Private Alleyways.
 2. Drainage **Culverts** Located **Below** the Managed Lane Boxes.
 3. Drainage **Culverts** Located **Above** the Managed Lane Boxes.
 4. Large Drainage **Tunnel** Located **Below** IH 635.
- Drop Structure on Farmers Branch Creek will be Relocated to the East Side of IH 35E.
- Valwood Improvement Authority Levee will be Incorporated into the Westbound Frontage Road Design near Luna Road.



The screenshot shows a web browser window titled "IH635 Drainage Study". It features a login form with fields for "Login Name" and "Password", and a "Submit" button. Below the form is the Texas Department of Transportation logo. At the bottom, there is a message: "To request a login ID and password Email: mark@maggire.net. If you've forgotten your login name and/or password, [click here.](#)"









Topics

- The West Section:**
 - Project Description
 - Drainage Study
 - Geotechnical Investigation
- Managed Lanes:**
 - Value Pricing
 - Investment Grade Traffic and Revenue Study

What kind of lane?

HOV Lane

Toll Lane

Integrated


HOT Lane

Special Use

Managed Lane

Texas Department of Transportation


LBJ INTERSTATE 635



What is Value Pricing?

It entails fees or tolls for road use which could vary with the

- *Level of Congestion*
- *Time of Day*
- *Occupancy*
- *Vehicle Type*



Planning Phase



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Where has it been used?



These four projects have stood the test of time as successes.

- *SR 91 → California*
- *I-15 → San Diego*
- *I-10 → Houston*
- *Toll Bridges - Fort Myers*



LBJ
FREWAY
BRIDGE
635

Planning
Phase



Managed Lanes - Why?

(Reasons for Them)

- **Manage** the traffic flow through use of ITS
- Provide a more **predictable** trip for HOT Lane users
- **Mobility driven** to encourage HOV usage in the peak periods and longer trip movements for SOV's in the off-peak
- Improved **safety** by sorting or slotting of traffic
- Improved regional **air quality**
- **Accelerate** project completion through pooling and leveraging funding sources. By use of Bonds.
- Generate a **revenue bonus** (\$16M-\$27M/year by 2015)
- **Opportunity for funding** through TEA-21 Value Pricing Pilot Program, TIFIA, and others

Value Pricing - How does it work?

A Possible Scenario

Mainlanes	HOT - Lanes	Mainlanes
Mixed Flow	HOV 3 SOV	Mixed Flow
Free	HOV - Free SOV - \$\$\$	Free
Free	HOV - Free SOV - \$\$	Free
Free	HOV - Free SOV - \$\$\$	Free
Free	HOV - Free SOV - \$	Free

HOV - High Occupancy Vehicle
SOV - Single Occupant Vehicle

	<h2 style="text-align: center;">Traffic and Revenue Study</h2> <h3 style="text-align: center;">Range of Revenue by Scenario</h3> <h4 style="text-align: center;">(Phase II Results)</h4>	
1-	8 Lanes w/ 2+ HOV Free	\$16.2 Million
2-	8 Lanes w/ 3+ HOV Free	\$27.1 Million
3-	Lanes w/ 2+ HOV Free	\$ 8.5 Million
4-	4 Lanes w/ 3+ HOV Free	\$16.1 Million
5-	5 Lanes w/ 2+ (Less Access)	\$16.7 Million
6-	8 Lanes w/ 3+ (Less Access)	\$24.1 Million
7-	10 Lanes w/ 2+ (Less Access)	\$ 9.4 Million
8-	10 Lanes w/ 3+ (Less Access)	\$15.2 Million
9-	8 Lanes w/ 2+ HOV Free (2025)	\$27.9 Million
10-	8Lanes w/ 3+ HOV Free (2025)	\$47.6 Million

Note: 10 lane scenarios are not possible with out a lane width and shoulder design exception.

The diagram illustrates the layout of managed lanes on a highway, showing Westbound and Eastbound directions. Key features include:

- Westbound:** Labeled at the top left. It shows a series of blue rectangular blocks representing lane configurations. A yellow arrow indicates a 'Ramp Do Not Exit in Redundant Access Configuration' leading to a 'Below Grade' section (orange rectangle). A green line with arrows indicates 'Open A.M. Only' access. A blue line with arrows indicates 'Open P.M. Only' access. A blue hatched area represents a 'Mainline-Managed Lane Connection'.
- Eastbound:** Labeled at the bottom left. It shows a similar series of blue rectangular blocks. A yellow arrow indicates a 'Ramp Do Not Exit in Redundant Access Configuration' leading to a 'Below Grade' section (orange rectangle). A red line with arrows indicates 'Open P.M. Only' access. A red hatched area represents a 'Mainline-Managed Lane Connection'.
- Intermodal Transfer Points:** Indicated by icons for Rail (train) and Bus (bus) at various locations along the highway.
- Legend:**
 - Frontage Road Connection (Blue line with arrow)
 - Mainline-Managed Lane Connection (Blue hatched area)
 - Intersection Street Connection (Blue line with arrow)
 - Ramp Do Not Exit in Redundant Access Configuration (Yellow arrow)
 - Below Grade (Orange rectangle)
 - Intermodal Transfer Points (Train and Bus icons)
- Establish the Network:** A red text label at the bottom right.
- MANAGED LANES ACCESS LOCATIONS:** A red text label at the bottom center.

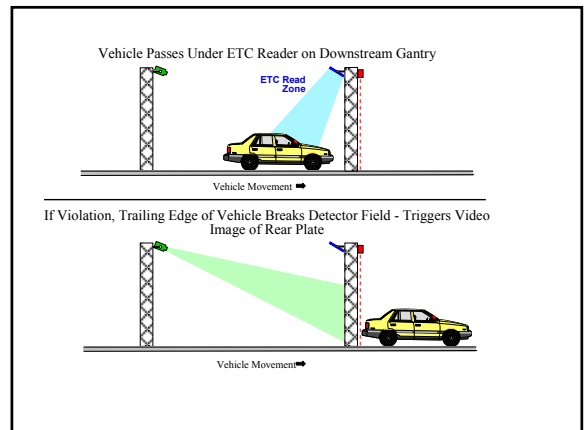
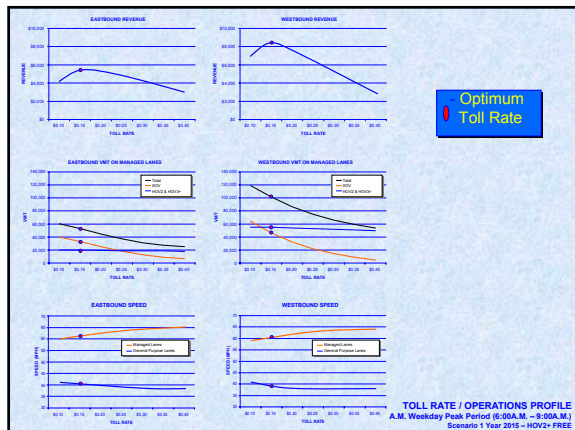
Plot Traffic DATA

Number of Vehicles

Location

LEGEND

- AM
- PM
- Day
- Night



Traffic and Revenue Study
Range of Revenue by Scenario
(Phase III Results)

- Early Results Expected in June of 2004
 - 2+
 - 3+
 - Transit & Van Pools
 - All Toll
- Range of Project Build-Out Alternatives
 - A – US 75 to Just East of IH 35E
 - ABC – US 75 to Loop 12 and IH 35E Split
 - ABCDE – Same as above plus extension to Miller
 - A.....

Topics

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- 3 **Implementation:**
 - Comprehensive Development Agreement (CDA)

"Planning Road Trip"

"CDA Road Trip"




West Section Comprehensive Development Agreement (CDA) to...




Develop, Design and Construct and Potentially,
Finance, Maintain and Operate the LBJ Freeway
West Section Managed Lanes

✓ Hire Procurement Engineer

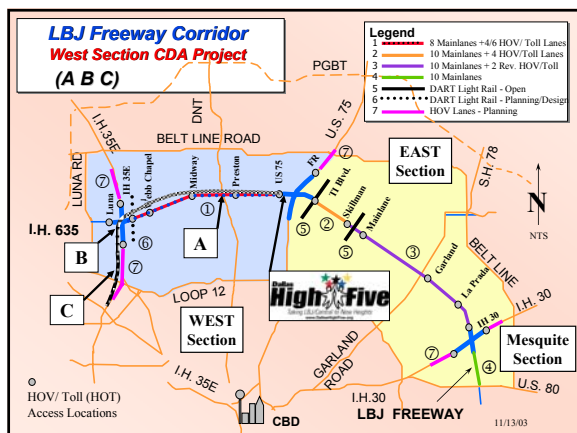
- Solicit Request for Qualifications (RFQ)
- Short List
- Solicit Request for Detailed Proposals (RFDP)
- Make Best Value Selection




West Section Procurement Engineer (PcE) has 3 - Basic Roles




- Procurement of the CDA Team
 - As needed to develop the RFDP requirements
- Preliminary Engineering / Early Design Tasks
 - As needed to define the RFDP for the CDA Team and define/minimize risk for the project
- Project Oversight & Management of the CDA
 - As defined in the RFDP process






West Section CDA Project Construction Costs

\$ Millions - 2003




A	West Section Tunnels and Managed Lanes	\$ 440
B	IH 635/ IH 35E Partial Interchange & Direct Connections	\$ 65
C	IH 35E / Loop 12 Direct Connections	\$ 125
Total : (Construction Costs Only)		\$ 630



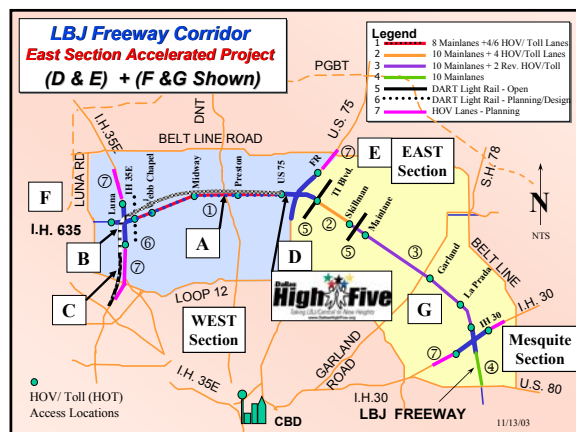
West Section - ABC (Funding – Sources)

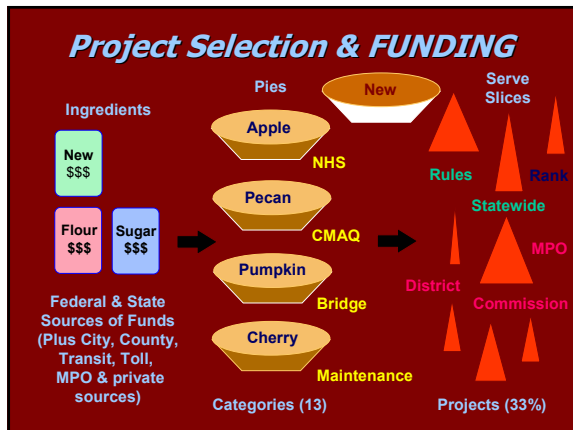
\$ Millions - 2003



● Revenue Bonds		\$ 300.0
● DART		\$ 64.0
● NCTCOG (Base)		\$ 50.0
● Prior Authorizations		\$ 7.3
● Sub Total		\$ 421.3
● Equity Gap (1)		\$ 209.3
● Total Project Costs		\$ 630.0

Note:
(1) TxDOT and NCTCOG will split this amount. TxDOT will pay back the NCTCOG \$105 +/- loan amount from Category 12 or the Texas Mobility Fund.





IH 635 (LBJ Freeway) Funding Update

Identified and Secured Funding:

- 2003 City of Dallas Bond Election (\$10 million – \$5M West)
- 2001, 2003 & 2004 Fed Appropriation Acts (\$7.3 million)
- East Section Early Frontage Road (\$5.3 million)
- West Section Early Frontage Road (\$24.5 million)
- Mesquite Section (\$22.3 of \$28.9 million)
- NCTCOG (MPO) partnership Program + Loan (\$152 million)
- Dallas Area Rapid Transit (\$64 million)

Potential Sources of Funding:

- Additional Local City Participation (D, FB, G & M)
- Dallas County
- TxDOT (TTA) Revenue Bonds
- NTTA
- FHWA (Federal Categories)
- TxDOT (Federal Matching Requirements & State Categories)
- Other (Private, TIFIA Loans, ...)

West Section Timeline & Schedule (Page 1 of 2)

✓ Receive "Satisfactory for Further Processing"	May 2003
✓ Hold Public hearing (Done)	June 2003
✓ Process all documents (Done)	July 2003
✓ Begin Geotechnical Unvestigation (Phase I Underway)	June 2003
✓ Initiate Investment Grade T&R Study (Underway)	July 2003
✓ Issue NOI for Procurement Engineer (Done)	Aug 2003
✓ NTP For Procurement Engineer (Done)	May 2004
✓ Obtain Environmental Clearance (FONSI) (Done)	Apr 29, 2004
• Receive 1st Report Data from T&R Study	June 2004

Timelines and schedules are subject to change. This provides an approximate time frame for each step in the process at this time (5/5/2004).

West Section Timeline & Schedule (Page 2 of 2)

• Issue RFQ for CDA	2nd Q 2004
• Issue Draft RFP for Industry Review	5 Months
• Industry Review and Issuance of Final RFP	4 Months
• Prepare CDA Detailed Proposals	4 Months
• Complete CDA Selection & Negotiations	3 Months
• Final T&R Report & Financial Plan Completed	Mar 2005
• Marketing/Approval of Bonds	Sep/Oct 2005
• Bond Sale	Oct 2005
• Execute Contract & Issue Notice to Proceed for Design	Nov 2005
• Issue Notice to Proceed for Construction	Jan 2006

Timelines and schedules are subject to change. This provides an approximate time frame for each step in the process at this time (5/5/2004).

Thank You for Listening

- Questions
- Comments
- Thoughts
- Etc....